Image 1771

PATENT
Customer No. 22,852
Attorney Docket No. 1197-224

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Jinichiro Kato et al.	)	Group Art Unit: 1771
	)	
Application No.: 09/744,884	)	Examiner: John J. Guarriello
	)	
Filed: January 31, 2001	)	
	)	
For: Polyketone Solution	)	

Commissioner for Patents
Washington, DC 20231

Sir:

TRANSMITTAL LETTER

Enclosed is a reply to the Office Action of November 10, 2003. The item(s) checked below are appropriate:

☒ Applicant(s) hereby petition(s) for a one month(s) extension of time to respond to the above Office Action. The fee of $110 for the Extension is enclosed.

The claims are calculated below:

	Claims Remaining After Amendment		Highest Number Previously Paid	Present Extra	Rate	Additional Fee
Total	6	-	131		x $ 18	$
Indep.	2	-	4		x $ 84	
☐ First Presentation of Multiple Dep. Claim(s)					+$280	
					Subtotal	$
					Reduction by ½ if small entity	-
					TOTAL	$

☐ A fee of $____to cover the cost of the additional claims added by this reply is enclosed.

☐ A fee of $____ to cover _____ is enclosed.

☒ A check for $110 to cover the above fee(s) is enclosed.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Dated: March 10, 2004

By: _____
Arthur S. Garrett
Reg. No. 20,338

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

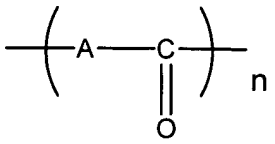
Sir:

RESPONSE

The indicated allowance of claims 1-3 in the Office Action of November 10, 2003 is appreciated. Also appreciated is the withdrawal of the rejection of claims 5-7 under 35 U.S.C. § 103(a) for being obvious over Ash in view of Lommerts.

However, the Examiner now rejects claims 5-7 under 35 U.S.C. § 102(b) for being anticipated by Ash. Reconsideration of the rejection is requested for the following reasons.

Independent claim 5, claims a solution of a polyketone, comprising a polyketone as an alternating copolymer of carbon monoxide and one or more olefins, wherein 90 wt% or more of said alternating copolymer is represented by the structural formula (1):



(1)

wherein A is an alkylene group and n is an integer of 1 or more and a solvent, wherein said solvent is an aqueous solution containing at least one zinc halide and at least one metal salt which is other than said zinc halide(s) and is soluble in water at 50°C in a proportion of 1 wt% or more.

Note that in claim 5, the solvent is an aqueous solution containing at least one zinc halide "and" at least one metal salt which is other than said zinc halide(s). An example of the other metal salt is an alkali metal halide.

Ash discloses a process for producing filaments from a solution of polyketone, wherein the aqueous or organic solvent is ZnX_2 or LiY, X being selected from the group consisting of Cl, Br, and I and Y being selected from the group consisting of Br, I, and SCN. In the Examples, a polyketone solution is prepared using an aqueous solution of only $ZnCl_2$.

While it is submitted that Ash only teaches to one skilled in the art to use an aqueous solution of either ZnX_2 or LiY, the Examiner refers to the abstract, last sentence where it states that the "solvents are zinc and lithium based solutions" or column 1, lines 57-58 or column 3, lines 25-26 of Ash where it states that the "solvents ... are comprised of ZnX_2 and LiY" as a teaching that the solvent can be the claimed solvent of a zinc halide and an alkali metal halide.

However, the Examiner has taken these teachings out of context as there is nothing in Ash to suggest that the patentee ever contemplated using both, for example, zinc chloride and lithium bromide, as the solvent.

First of all, in each of the above quoted passages, the patentee refers to the "solvents are" (emphasis added). If the patentee had intended the solvent to be a combination of ZnX_2 and LiY, he would have said the solvent "is," just as applicants have defined the solvent in claim 5.

This is consistent with other parts of the disclosure of Ash. For example, in column 3, lines 36-37, it states "when the solvent is an aqueous solution of LiBr or LiI" in column 3, line 50, it states "When the solvent is an aqueous solution of $ZnCl_2$," in column 3, lines 61-62, it states "When the solvent is an aqueous solution of $ZnBr_2$," and in column 3, lines 64-65 it states "When the solvent is an aqueous solution of ZnI_2. It should be noted here that in discussing a suitable solvent for use in the polyketone solution, lithium salts are discussed separately from the zinc salts and each are characterized independently as "the solvent." At no place does the patentee state that the solvent of the polyketone solution is an aqueous solution of a lithium salt and a zinc salt.

This interpretation of Ash is further strengthened by the Examples, where patentee only used an aqueous solution of zinc chloride as the solvent and claims 1 or 8 where it sets forth that the solvent is ZnX_2 "or" LiY. See also claims 2, 4, or 5. If the patentee had intended the solvent to also be an aqueous solution of ZnX_2 and LiY, why was this possibility excluded from the claims? The obvious reason is that patentee never contemplated the solvent being an aqueous solution of ZnX_2 and LiY, so there was no reason to claim it.

As pointed out in the Amendment filed August 12, 2003, when the polyketone solution contains as the solvent an aqueous solution containing at least one zinc halide

and at least one metal salt which is other than said zinc halide(s) and is soluble in water at 50°C in a proportion of 1 wt% or more, the inventors unexpectedly found out that there are advantage in such solutions and in the polyketone fibers produced from such solutions.

First, the polyketone solution has a lower viscosity in comparison to polyketone solutions where the solvent is an aqueous solution of a zinc halide only. In the specification at page 39, lines 9-14, it is clearly stated that the solution viscosity of polyketone solutions containing a metal salt other than zinc halide in addition to the zinc halide is lower than that of a polyketone solution without such metal salt (Example 13). See also Table 2 on page 41 of the specification.

When the viscosity of a polyketone solution to be spun into fiber is low, it is easier to degas from the solution the air that has been introduced during the step of dissolving the polyketone. In addition, the lower the viscosity of the polyketone solution, the easier is the extrusion. Consequently, thread breakage during spinning and unevenness of the size of the fiber can be reduced. It is, therefore, significantly advantageous that the polyketone solution have a lower viscosity, in terms of stable production of even fibers.

It was further determined that the long-term stability of the polyketone solution is better than polyketone solutions where the solvent contains only zinc halide. As noted on page 39, lines 14-19, the solution of Example 13, i.e., the solution where the solvent contains only zinc chloride, changed its color from light yellow to brown after several days, while the other solutions, i.e., the solutions containing a metal salt in addition to a zinc halide did not. (Examples 14-22). The coloring of the solution of Example 13

suggests that degradation or denaturation of the polyketone occurs when the solution is stored for a long time in a dope storage tank or when the dope is retained in dead spaces in a polymer dissolving device or in a storage tank. If the long-term stability of the polyketone solution is low, there will be a problem of inferior properties of the polyketone fiber upon industrial production. Polyketone solutions having long-term stability are, thus, significantly advantageous in the industrial production of fiber.

It is submitted that in view of these unexpected results, it is clear that the patentee did not teach nor would a man skilled in the art believe from the teachings of Ash that the solvent for the polyketone solutions could be an aqueous solution of a zinc salt and a lithium salt.

As noted by the Federal Circuit in Motorola, Inc. v. Interdigital Tech. Corp., 121 F.3d 1461, 43 USPQ2d 1481 at page 1490 (Fed. Cir. 1997).

> For a prior art reference to anticipated a claim, the reference must disclose each and every element of the claim with sufficient clarity to prove its existence in the prior art .... Although this disclosure requirement presupposes the knowledge of one skilled in the art of the claimed invention, that presumed knowledge does not grant a license to read into the prior art reference teachings that are not there. (emphasis added)

See also M.P.E.P. §2131 where it states that:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

When the prior art does not have a specific example of and does not appreciate or even hint at the unexpected results achieved by an invention, the prior art cannot be said to disclose the invention "with sufficient clarity to prove its existence" or "in as complete detail as is contained in the claim."

Reconsideration of the rejection of claims 5-7 under 35 U.S.C. § 102 and their allowance together with claims 1-3 is requested.

In view of the foregoing remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: March 10, 2004

By: 

Arthur S. Garrett
Reg. No. 20,338

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